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Title : Habitat utilization, diving and foraging behavior of adult female California sea lions (Zalophus californianus): Beyond physiological limits

Category : Behavior

Student : Doctoral

Preferred Format : Either Oral or Poster Presentation

Abstract : The California sea lion (CSL) is one of the most abundant pinniped species along the West Coast of the United States and Mexico, however only limited information is available on its diving and foraging behavior. This study examined the habitat utilization, diving and foraging behavior of 7 adult female CSLs in April 2003 at Los Islotes, Baja California Sur, Mexico. Animals were equipped with satellite tags, time-depth and stomach temperature recorders. Satellite tags identified foraging locations while dive recorders measured dive depths, water temperature, and swim velocity. Stomach temperature data were used to identify feeding events and calculate foraging success. Females used diverse foraging areas up to 130km from the island, though most foraging occurred within 35km. Forging trips ranged from 13 hours to 2.7 days (mean = 1.7 days) and average trip lengths varied between females. Multiple females were found to return to the same area during sequential foraging trips, showing habitat and/or prey preference. The dive depths and dive durations recorded from these animals were beyond those previously measured in CSLs. The maximum dive depth was 350m and maximum dive duration was over 10 minutes. Mean dive depths were between 100 and 185m, up to 6 times greater than previously measured. Mean dive durations ranged between 4.5 and 5.7 minutes and for all females 60% of the dives were 5 minutes or more. From the stomach temperature recorders we found foraging success rates up to 69 % during a single foraging bout. Published aerobic dive limit (ADL) values for CSLs range from 2.3 to 5.8 minutes. Given this range Los Islotes females exceeded ADL on 82% to 43% of their dives, respectively. Differences in prey species found at Los Islotes may be the driving factor pushing these animals to forage beyond their physiological limits.